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The pristine rain forest? Remnants of historical human impacts on current tree species composition and diversity

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Appendix S1 Annotated list of [142](#) species included in the analysis of disturbance history of
16 ha of lowland rain forest in southern Cameroon

Family	Species	Habit*	Recruitment plots†				Recruitment‡			Guild§	Forest plots¶	
			N	individuals/plot			preference				trees	BA
					OG	L	SC	oc	ab	WAI	n/ha ⁻¹	m ² /ha ⁻¹
Anacardiaceae	<i>Antrocaryon klaineum</i> Pierre	TL	13	0.19	0.12	0.33	3	4	2.37		0.81	0.25
	<i>Pseudospondias microcarpa</i> (A.Rich.) Engl.	TL	13	0.17	0.29	0.17	4	4	2.04		3.13	0.17
	<i>Sorindeia grandifolia</i> Engl.	TS	68	1.58	0.41	0.33	4	4	1.54		4.63	0.12
	<i>Trichoscypha acuminata</i> Engl.	TL	8	0.22	0.00	0.00	1	1	1.00		1.38	0.06
	<i>Anisophyllea purpurascens</i> Hutch. & Dalziel	TS	52	1.37	0.18	0.08	4	14	1.35		1.19	0.04
Annonaceae	<i>Annickia chlorantha</i> (Oliv.) Setten & P.J.Maas	TL	58	0.61	1.12	1.42	4	4	2.19		6.50	0.31
	<i>Anonidium mannii</i> (Oliv.) Engl. & Diels	TL	128	1.11	2.41	3.92	3	3	2.35	Sb	0.31	0.04
	<i>Greenwayodendron suaveolens</i> (Engl. & Diels) Verdc.	TL	224	2.94	3.41	5.00	4	4	2.12		8.88	0.24
	<i>Meiocarpidium lepidotum</i>	TS	46	0.89	0.76	0.08	4	4	1.56	Sb	5.19	0.11
	<i>Monodora myristica</i> (Gaertn.) Dunal	TL	14	0.08	0.65	0.00	4	4	1.79	Sb	1.81	0.12
	<i>Xylopia aethiopica</i> (Dunal) A.Rich.	TL	106	1.11	2.24	2.42	2	2	2.22		5.06	0.28
	<i>Alstonia boonei</i> De Wild.	TL	26	0.03	1.18	0.42	3	2	2.34	Pr	2.19	0.79
Apocynaceae	<i>Funtumia africana</i> (Benth.) Stapf	TL	3	0.08	0.00	0.00	4	4	1.00	Ld	0.56	0.03
	<i>Funtumia elastica</i> (Preuss) Stapf	TL	102	0.17	0.53	7.25	3	3	2.73	Ld	0.50	0.03
	<i>Picralima nitida</i> (Stapf) T.Durand & H.Durand	TL	1	0.00	0.06	0.00	4	4	2.00	Sb	2.13	0.07
	<i>Rauvolfia caffra</i> Sond.	TL	14	0.00	0.41	0.58	3	3	2.62		0.38	0.03
	<i>Rauvolfia vomitoria</i> Afzel.	TL	47	0.03	0.76	2.75	3	3	2.75	Pr	0.38	0.01
	<i>Tabernaemontana crassa</i> Benth.	TS	214	2.50	3.59	5.25	4	3	2.18	Sb	3.56	0.09
	<i>Bombax buonopozense</i> P.Beauv.	TL	2	0.00	0.00	0.17	4	4	3.00	Pr	0.06	0.01
Bombacaceae	<i>Ceiba pentandra</i> (L.) Gaertn.	TL	2	0.00	0.12	0.00	4	4	2.00	Pr	0.13	0.10
Burseraceae	<i>Canarium schweinfurthii</i> Engl.	TL	61	0.17	1.88	1.92	2	3	2.44	Ld	0.63	0.15
	<i>Dacryodes edulis</i> (G.Don) H.J.Lam	TL	269	7.22	0.47	0.08	1	1	1.20		2.81	0.18
	<i>Dacryodes macrophylla</i> (Oliv.) H.J.Lam	TL	73	1.53	0.82	0.33	1	1	1.60		3.81	0.17

	<i>Santiria balsamifera</i> Oliv.	TL	125	2.54	1.59	0.75	4	4	1.73		3.69	0.22
Cecropiaceae	<i>Musanga cecropioides</i> R.Br. ex Tedlie	TL	122	0.00	7.06	0.17	2	2	2.06	Pr	5.63	0.89
	<i>Myrianthus arboreus</i> P.Beauv.	TL	7	0.08	0.06	0.25	4	4	2.49	Sb	0.56	0.02
Chrysobalanaceae	<i>Maranthes chrysophylla</i> (Oliv.) Prance	TL	19	0.25	0.53	0.08	4	4	1.81	Sb	0.06	0.00
Combretaceae	<i>Terminalia superba</i> Engl. & Diels	TL	6	0.03	0.00	0.42	4	3	2.82	Pr	2.44	0.85
Connaraceae	<i>Jollydora duparquetiana</i> (Baill.) Pierre	TS	97	2.33	0.53	0.33	1	1	1.52		0.25	0.00
Ebenaceae	<i>Diospyros bipindensis</i> Gürke	TS	35	0.81	0.24	0.17	1	1	1.53	Sb	3.44	0.08
	<i>Diospyros conocarpa</i> Gürke & K.Schum.	TS	90	2.19	0.53	0.17	1	1	1.44	Sb	0.38	0.01
	<i>Diospyros crassiflora</i> Hiern	TL	88	1.89	1.18	0.00	2	1	1.45	Sb	1.00	0.10
	<i>Diospyros hoyleana</i> F.White	TS	59	1.64	0.00	0.00	1	1	1.00		0.06	0.00
	<i>Diospyros suaveolens</i> Gürke	TL	76	1.14	2.00	0.08	4	4	1.68		2.81	0.08
	<i>Diospyros zenkeri</i> (Gürke) F.White	TL	12	0.19	0.24	0.08	4	4	1.79		0.81	0.02
Euphorbiaceae	<i>Alchornea floribunda</i> Müll.Arg.	ISSh	143	2.83	2.06	0.75	4	4	1.72		4.06	0.19
	<i>Antidesma laciniatum</i> Müll.Arg.	TS	2	0.06	0.00	0.00	4	4	1.00	Sb	2.50	0.06
	<i>Antidesma vogelianum</i> Müll.Arg.	TS	15	0.22	0.24	0.25	4	4	1.99		0.19	0.01
	<i>Bridelia micrantha</i> (Hochst.) Baill.	TL	29	0.00	1.53	0.25	2	2	2.21	Pr	0.56	0.06
	<i>Dichostemma glaucescens</i> Pierre	TS	144	1.50	3.53	2.50	4	4	2.21		6.75	0.24
	<i>Discoglypsemna caloneura</i> (Pax) Prain	TL	13	0.03	0.59	0.17	4	2	2.24	Pr	0.38	0.04
	<i>Drypetes preussii</i> (Pax) Hutch.	TL	26	0.53	0.29	0.17	4	4	1.66		1.13	0.04
	<i>Maesobotrya barteri</i> (Baill.) Hutch.	TS	10	0.28	0.00	0.00	4	4	1.00	Sb	0.06	0.00
	<i>Maprounea membranacea</i> Pax & K.Hoffm.	TS	26	0.00	1.47	0.08	2	2	2.10		0.63	0.02
	<i>Margaritaria discoidea</i> (Baill.) Webster	TL	7	0.00	0.12	0.42	4	4	2.70	Pr	2.06	0.19
	<i>Ricinodendron heudelotii</i> (Baill.) Heckel	TL	10	0.00	0.47	0.17	2	2	2.32	Pr	1.13	0.16
	<i>Tetrorchidium didymostemon</i> (Baill.) Pax & K.Hoffm.	TS	46	0.03	1.47	1.67	3	3	2.56	Pr	0.69	0.02
	<i>Uapaca guineensis</i> Müll.Arg.	TL	7	0.06	0.29	0.00	4	4	1.79	Ld	11.00	0.64
	<i>Uapaca heudelotii</i> Baill.	TL	3	0.06	0.06	0.00	4	4	1.57		0.25	0.02
	<i>Uapaca staudtii</i> Pax	TL	1	0.00	0.06	0.00	4	4	2.00		2.69	0.12
	<i>Uapaca vanhouttei</i> De Wild.	TS	45	0.42	1.12	0.92	4	2	2.13		0.56	0.04

Flacourtiaceae	<i>Casearia barteri</i> Mast.	TL	76	1.47	0.94	0.58	4	4	1.74	Pr	0.69	0.02
	<i>Scottellia klaineana</i> Pierre	TL	29	0.69	0.12	0.17	4	4	1.50	Sb	2.94	0.07
Guttiferae	<i>Allanblackia floribunda</i> Oliv.	TL	90	1.56	0.65	1.92	4	4	2.01	Sb	0.06	0.01
	<i>Endodesmia calophylloides</i> Benth.	TS	35	0.72	0.47	0.08	4	4	1.62		0.44	0.03
	<i>Garcinia kola</i> Heckel	TL	2	0.03	0.06	0.00	4	4	1.68	Sb	0.31	0.00
	<i>Garcinia lucida</i> Vesque	TS	224	6.22	0.00	0.00	1	1	1.00		0.31	0.02
	<i>Garcinia mannii</i> Oliv.	TL	57	0.75	0.59	1.67	4	4	2.03		7.75	0.15
	<i>Mammea africana</i> Sabine	TL	53	1.11	0.59	0.25	4	4	1.71	Sb	0.13	0.00
	<i>Pentadesma butyracea</i> Sabine	TL	45	1.25	0.00	0.00	1	4	1.00	Sb	2.63	0.14
Huaceae	<i>Afrostryax kamerunensis</i> Perkins & Gilg	TS	229	6.36	0.00	0.00	1	1	1.00		0.06	0.02
Hypericaceae	<i>Harungana madagascariensis</i> Lam. ex Poir.	TS	2	0.00	0.06	0.08	4	4	2.59		0.06	0.00
Irvingiaceae	<i>Desbordesia glaucescens</i> (Engl.) Tiegh.	TL	17	0.06	0.65	0.33	2	2	2.32		5.56	0.64
	<i>Irvingia gabonensis</i> (Aubry-Lecomte ex O'Rorke) Baill.	TL	77	0.78	2.35	0.75	4	4	2.06	Ld	4.00	0.35
	<i>Irvingia grandifolia</i> (Engl.) Engl.	TL	2	0.03	0.06	0.00	4	4	1.68		0.50	0.03
	<i>Klainedoxa gabonensis</i> Pierre ex Engl.	TL	14	0.31	0.06	0.17	4	4	1.68	Ld	1.56	0.28
Lecythidaceae	<i>Petersianthus macrocarpus</i> (P.Beauv.) Liben	TL	13	0.00	0.12	0.92	3	3	2.83	Pr	0.94	0.08
Leguminosae-Caes.	<i>Afzelia bella</i> Harms / <i>A. pachyloba</i> Harms	TL	14	0.14	0.53	0.00	4	4	1.79		0.50	0.04
	<i>Anthonotha lamprophylla</i> / <i>A. fragrans</i> (Baker f.) Exell & Hillc.	TL	2	0.06	0.00	0.00	4	4	1.00		0.38	0.01
	<i>Anthonotha macrophylla</i> P.Beauv.	TS	278	1.31	3.71	14.00	3	3	2.45	Sb	7.63	0.15
	<i>Berlinia bracteosa</i> Benth.	TL	33	0.36	0.88	0.42	4	4	2.07		1.63	0.56
	<i>Brachystegia eurycoma</i> Harms / <i>B. laurentii</i> (De Wild.) Louis ex Hoyle	TL	61	0.29	2.53	0.67	4	4	2.18		0.13	0.01
	<i>Dialium pachyphyllum</i> Harms	TL	131	2.03	1.35	3.08	4	4	2.00		7.69	0.83
	<i>Distemonanthus benthamianus</i> Baill.	TL	71	0.17	0.41	4.83	3	3	2.66	Ld	1.31	0.08
	<i>Erythrophleum ivorense</i> A.Chev.	TL	29	0.33	0.71	0.42	4	4	2.09	Ld	1.19	0.79
	<i>Hylodendron gabunense</i> Taub.	TL	10	0.08	0.35	0.08	4	4	2.00		3.06	0.19
	<i>Hymenostegia afzelii</i> (Oliv.) Harms	TS	124	1.78	2.47	1.50	2	4	2.26	Sb	4.44	0.17
	<i>Julbernardia pellegriniana</i> Troupin	TL	83	1.44	1.82	0.00	4	4	1.55		0.13	0.01
	<i>Tetraberlinia bifoliolata</i> (Harms)	TL	257	3.94	6.65	0.50	4	4	1.71		1.44	0.08

	Hauman												
Leguminosae-Mim.	<i>Albizia adianthifolia</i> (Schum.)	TL	53	0.08	1.06	2.67	3	3	2.68	Ld	0.81	0.11	
	W.F.Wight												
	<i>Calpocalyx dinklagei</i> Harms / <i>C. heitzii</i> Pellegr.	TS	215	3.17	4.53	2.25	2	2	1.94		2.00	0.04	
	<i>Cylicodiscus gabunensis</i> Harms	TL	2	0.06	0.00	0.00	4	4	1.00	Sb	0.38	0.08	
	<i>Parkia bicolor</i> A.Chev.	TL	19	0.39	0.29	0.00	4	4	1.45	Ld	1.31	0.20	
	<i>Pentaclethra macrophylla</i> Benth.	TL	139	1.86	1.76	3.50	4	4	2.15	Ld	2.94	0.32	
	<i>Piptadeniastrum africanum</i> (Hook.f.)	TL	22	0.25	0.53	0.33	4	4	2.11	Ld	1.50	0.42	
	Brenan												
Leguminosae-Pap.	<i>Amphimas ferrugineus</i>	TL	5	0.06	0.18	0.00	4	4	1.78		0.06	0.00	
	<i>Baphia laurifolia</i> Baill.	TS	9	0.03	0.35	0.17	4	2	2.28		0.19	0.00	
	<i>Pterocarpus soyauxii</i> Taub.	TL	17	0.11	0.35	0.58	4	3	2.40		1.50	0.38	
Lepidobotryaceae	<i>Lepidobotrys staudtii</i> Engl.	TS	1	0.00	0.00	0.08	4	4	3.00		0.81	0.07	
Medusandraceae	<i>Soyauxia talbotii</i> Oliv.	TSSh	2	0.06	0.00	0.00	4	4	1.00		5.13	0.14	
Meliaceae	<i>Carapa procera</i> DC.	TL	106	1.61	1.94	1.25	4	4	1.95	Sb	3.19	0.12	
	<i>Entandrophragma angolense</i>	TL	2	0.00	0.12	0.00	4	4	2.00	Ld	0.25	0.02	
	(Welw.) C.DC.												
	<i>Entandrophragma utile</i> (Dawe & Sprague) Sprague	TL	1	0.03	0.00	0.00	4	4	1.00	Ld	0.56	0.38	
	<i>Guarea cedrata</i> (A.Chev.) Pellegr.	TL	21	0.17	0.24	0.92	4	3	2.47	Sb	0.38	0.04	
	<i>Heckeldora staudtii</i> (Harms) Staner	TS	10	0.22	0.12	0.00	4	4	1.43		0.06	0.00	
	<i>Lovoa trichilioides</i> Harms	TL	87	1.17	1.65	1.42	4	4	1.99	Ld	1.56	0.14	
	<i>Trichilia gilgiana</i> Harms	TL	2	0.03	0.06	0.00	4	4	1.68		0.19	0.00	
	<i>Trichilia rubescens</i> Oliv.	TL	81	0.11	0.12	6.25	3	3	2.87		0.88	0.02	
	<i>Trichilia welwitschii</i> C.DC.	TL	2	0.03	0.06	0.00	4	4	1.68		8.63	0.15	
Moraceae	<i>Ficus mucoso</i> Welw. ex Ficalho	TL	6	0.00	0.12	0.33	4	3	2.69	Pr	0.06	0.01	
	<i>Milicia excelsa</i> (Welw.) C.C.Berg	TL	17	0.00	0.53	0.67	3	3	2.53	Pr	0.13	0.01	
	<i>Treculia africana</i> Decne.	TL	14	0.14	0.41	0.17	4	4	2.04	Ld	1.00	0.03	
	<i>Treculia obovoidea</i> N.E.Br.	TL	465	11.06	2.53	2.00	4	1	1.71		14.31	0.34	
Myristicaceae	<i>Coelocaryon preussii</i> Warb.	TL	191	1.92	3.00	5.92	3	3	2.28		31.25	2.37	
	<i>Pycnanthus angolensis</i> (Welw.) Warb.	TL	108	0.83	1.76	4.00	3	3	2.36	Ld	19.50	3.24	
	<i>Staudtia kamerunensis</i> Warb.	TL	247	2.39	2.94	9.25	4	3	2.26		21.56	0.84	
Ochnaceae	<i>Lophira alata</i> Banks ex Gaertn.f.	TL	125	0.17	5.65	1.92	2	2	2.37	Pr	1.69	1.69	
Olacaceae	<i>Coula edulis</i> Baill.	TL	16	0.28	0.18	0.25	4	4	1.83	Sb	7.38	1.04	
	<i>Olax subscorpioidea</i> Oliv.	TS	1	0.00	0.00	0.08	4	4	3.00	Sb	0.44	0.01	

	<i>Ptychopetalum petiolatum</i> Oliv.	TS	7	0.19	0.00	0.00	4	4	1.00		1.94	0.03
	<i>Strombosia grandifolia</i> Hook.f. ex Benth.	TS	80	1.64	0.59	0.92	4	1	1.72		11.19	0.36
	<i>Strombosia pustulata</i> Oliv.	TL	141	2.44	2.41	1.00	2	4	1.80		6.88	0.35
	<i>Strombosiosis tetrandra</i> Engl.	TL	3	0.08	0.00	0.00	4	4	1.00		3.81	0.22
Palmae	<i>Elaeis guineensis</i> Jacq.	TS	26	0.00	0.12	2.00	3	3	2.90	Pr	0.06	0.01
Pandaceae	<i>Panda oleosa</i> Pierre	TS	12	0.08	0.35	0.25	4	4	2.26	Sb	1.69	0.21
Passifloraceae	<i>Barteria fistulosa</i> Mast.	TS	24	0.00	0.24	1.67	3	3	2.81		0.94	0.02
Rhizophoraceae	<i>Poga oleosa</i> Pierre	TL	7	0.03	0.24	0.17	4	4	2.31		0.31	0.11
Rubiaceae	<i>Aulacocalyx caudata</i> (Hiern) Keay	TS	12	0.17	0.24	0.17	4	4	2.06		0.06	0.00
	<i>Aulacocalyx jasminiflora</i> Hook.f.	TS	17	0.39	0.18	0.00	4	4	1.32	Sb	1.06	0.02
	<i>Aulacocalyx talbotii</i> (Wernham) Keay	TS	1	0.00	0.06	0.00	4	4	2.00		1.25	0.02
	<i>Hallea stipulosa</i> (DC.) Leroy	TL	1	0.00	0.06	0.00	4	4	2.00		0.13	0.01
	<i>Massularia acuminata</i> (G.Don) Bullock ex Hoyle	TS	276	3.44	4.47	6.33	4	4	2.13	Sb	0.25	0.00
	<i>Nauclea diderrichii</i> (De Wild. & T.Durand) Merrill	TL	4	0.06	0.00	0.17	4	4	1.55	Pr	0.69	0.10
	<i>Pausinystalia johimbe</i> (K.Schum.) Pierre ex Beille	TL	55	0.36	0.18	3.25	4	4	2.20		3.38	0.17
	<i>Rothmannia lujae</i> (De Wild.) Keay	TS	37	0.72	0.47	0.25	4	4	1.77		1.44	0.03
	<i>Rothmannia talbotii</i> (Wernham) Keay	TS	13	0.36	0.00	0.00	1	4	1.00		0.06	0.00
Rutaceae	<i>Zanthoxylum heitzii</i> (Aubrév. & Pellegr.) P.G.Waterman	TL	3	0.00	0.18	0.00	4	4	2.00		0.44	0.02
Sapindaceae	<i>Blighia unijugata</i> Baker	TL	1	0.03	0.00	0.00	4	4	1.00	Sb	0.06	0.00
Scytropetalaceae	<i>Oubanguia africana</i> Baill.	TL	36	1.00	0.00	0.00	4	4	1.00		0.13	0.00
Sterculiaceae	<i>Cola ficifolia</i> Mast. / <i>C. lateritia</i> K.Schum. / <i>C. argentea</i> Mast.	TS	83	1.11	2.18	0.58	2	2	1.91		1.88	0.03
	<i>Cola verticillata</i> (Thonn.) Stapf ex A.Chev.	TL	41	0.92	0.00	0.67	1	1	1.72	Sb	2.00	0.06
	<i>Octolobus spectabilis</i> Welw.	TS	37	1.00	0.06	0.00	4	4	1.13	Sb	1.75	0.07
	<i>Pterygota bequaertii</i> De Wild.	TL	3	0.00	0.12	0.08	4	4	2.42	Ld	0.44	0.01
	<i>Scaphopetalum blackii</i> Mast.	TS	679	12.36	9.59	5.92	3	4	2.06		0.25	0.02
	<i>Sterculia oblonga</i> Mast.	TL	42	0.00	0.35	3.00	3	3	2.80	Ld	0.69	0.05
	<i>Sterculia tragacantha</i> Lindl.	TL	15	0.11	0.41	0.33	4	4	2.33	Pr	0.94	0.05
Tiliaceae	<i>Desplatsia subericarpa</i> Bocq.	TS	29	0.36	0.47	0.67	4	4	1.40	Sb	0.88	0.05
	<i>Duboscia macrocarpa</i> Bocq.	TL	6	0.17	0.00	0.00	4	4	1.00	Ld	1.56	0.15
	<i>Microcos coriacea</i> (Mast.) Burret	TS	2	0.06	0.00	0.00	4	4	1.00		5.06	0.28

Ulmaceae	<i>Celtis mildbraedii</i> Engl.	TL	51	0.78	0.76	0.83	4	4	2.05	Sb	0.63	0.09
Verbenaceae	<i>Vitex grandifolia</i> Gürke	TS	2	0.00	0.12	0.00	4	4	2.00	Sb	1.25	0.17
Violaceae	<i>Rinorea dentata</i> P.Beauv.	TS	12	0.28	0.06	0.08	4	4	1.76	Sb	1.88	0.05
Total forest plots (400 species):											532	35.60
Total analysis (142 species):											354	27.19

* Habit: ~~ILS~~ = large tree (> 15 m tall), TS = understorey tree (3 – 15 m tall), ~~Sh = shrub (multitemmed or < 3 m tall)~~. † Recruitment plots (plot size 625 m², n = 65, individuals height ≥ 50 cm and dbh < 10 cm): N = total number of individuals included in the analysis of recruitment preference; average number of individuals in: OG = old growth forest (n = 36), L = logging gaps (n = 17), SC = shifting cultivation fields (n = 12). ‡ Recruitment preference: oc = occurrence preference (presence/absence), ab = abundance preference (log transformed number individuals), WAI = weighted average index (see text). Species' recruitment preference is indicated by 1 = old growth forest, 2 = logging gaps, 3 = shifting cultivation field, 4 = no (significant) preference. WAI values indicate relative position of recruitment preference for conditions ranging from 1 (old growth forest) to 3 (shifting cultivation). § Ecological guild based on literature, mainly Hawthorne (1996) and Cable & Cheek (1998): Sb = shade-bearer, Ld = light-demanding non-pioneer, Pr = pioneer. ¶ Forest plots (plot size 1 ha, n = 16, individuals dbh ≥ 10 cm): average number of individuals per ha, average basal area per ha. The values of the ten most important species in terms of average abundance and average basal area per hectare are given in bold.~~The values of the ten most important species for abundance and for dominance are given in bold.~~